

NAME: _____ DATE: _____ CLASS: _____

MY NASA DATA: Think Green – Utilizing Renewable Solar Energy

http://mynasadata.larc.nasa.gov/?page_id=474?&passid=36

Use the following 2 sets of data to create plots and to answer questions 1 and 2.

Dataset 1 – Energy from the Sun (clear Sky), in Watts per square meter (35.5 N, 97.5 W)

JUL-2003: 325.900

AUG-2003: 291.500

SEP-2003: 264.400

OCT-2003: 205.200

NOV-2003: 162.900

DEC-2003: 137.400

JAN-2004: 152.200

FEB-2004: 202.500

MAR-2004: 247.900

APR-2004: 304.700

MAY-2004: 329.500

JUN-2004: 325.700

Dataset 2 – Energy from the Sun (with clouds), in Watts per square meter (35.5 N, 97.5 W)

JUL-2003: 304.200

AUG-2003: 241.800

SEP-2003: 195.100

OCT-2003: 158.500

NOV-2003: 102.600

DEC-2003: 106.900

JAN-2004: 110.300

FEB-2004: 135.300

MAR-2004: 186.700

APR-2004: 220.800

MAY-2004: 272.500

JUN-2004: 242.000

Questions:

1. What is the average solar energy this area receives in a given time (with and without clouds)?
2. Do you think it would be cost efficient to build or buy a solar collector in this location? Why or why not?

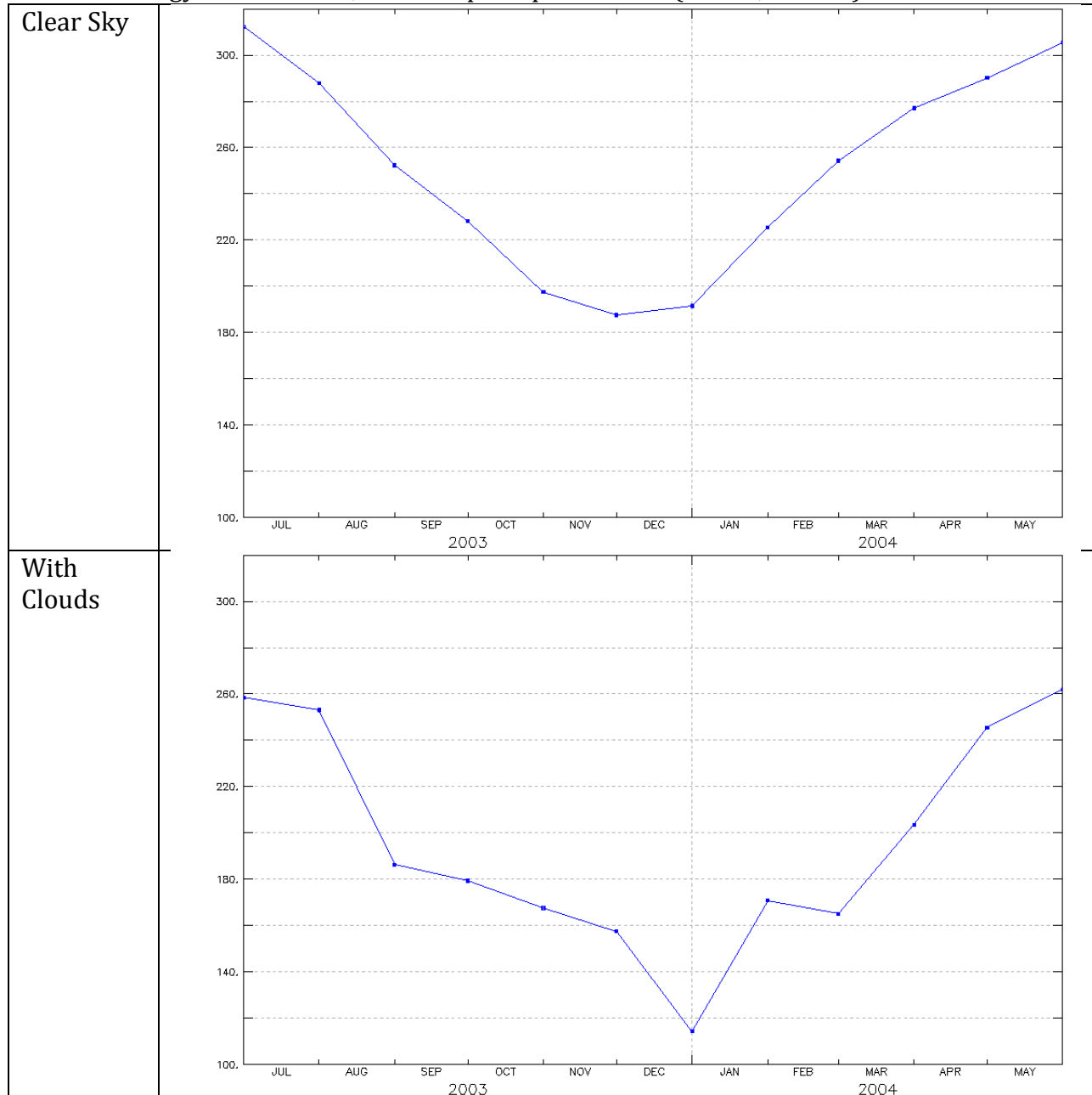
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The plots you made on page 1 should look something like the ones below and on the next page. Use these plots along with the ones you made from the data on page 1 to answer questions 3-7 at the end of this packet.

Plot 2 – Energy from the Sun, in Watts per square meter (25.5 N, 97.5 W) – **Farther SOUTH**

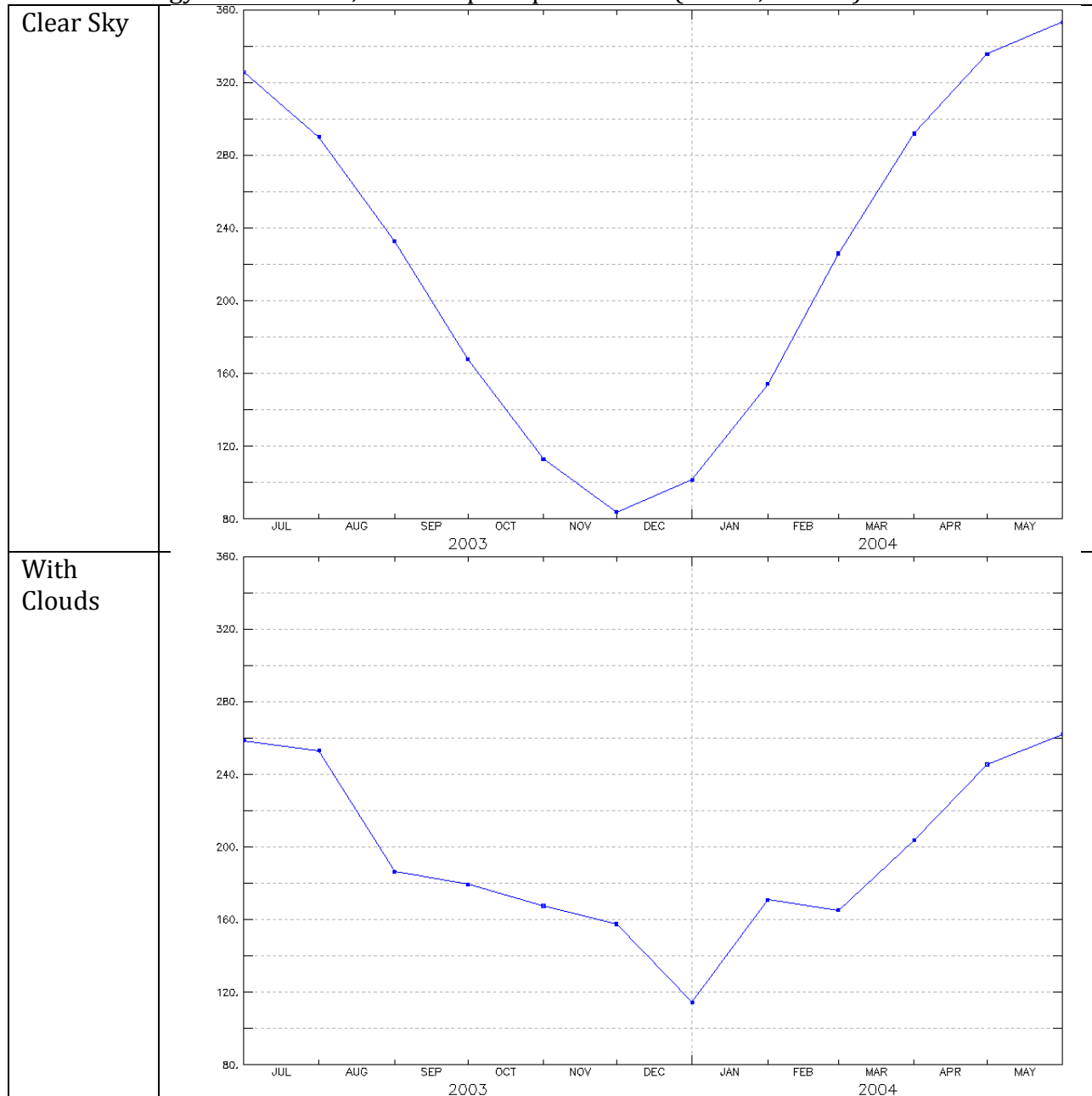


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Plot 3 – Energy from the Sun, in Watts per square meter (45.5 N, 97.5 W) – Farther NORTH



3. What is the relationship between the seasons (winter, spring, summer and fall, or wet – dry, depending on location) and the amount of solar energy that a particular place receives?

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4. Describe how latitude affects solar energy availability.

5. How would cloud coverage affect the amount of solar energy an area would receive?

6. Explain why knowing the average amount of cloud cover in a given area would be important when deciding whether or not to use solar energy as a power source.

7. How does latitude affect the amount of energy that reaches the Earth's surface?